



European Patent Office

(11)

EP 1 043 667 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication: (51) Int. Cl.⁷: G06F 17/60
10/11/2000 Patentblatt 2000/41

(21) Application No.: 00104530.1

(22) Application date: 3/10/2000

(84) Contracting countries named:
AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,
IE, IT, LI, LU, MC, NL, PT, SE

Extension countries named:
AL, LT, LV, MK, RO, SI

(30) Priority: 3/18/1999 AT 48599

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(54) Online Service for making contact efficiently between buyers and suppliers of chemical products

(57) The present invention concerns an Online Service which makes it possible to make contact efficiently between buyers and suppliers of chemical products. The suppliers enter their product information and any restrictions regarding sale into a database. Some suppliers enter information which makes it possible to generate bids automatically. Buyers provide the Online Service with their request, with the necessary specifications. The Online Service searches the database for suppliers with consideration of all restrictions and specifications, generates applicable automatic bids, sends these and informs all relevant suppliers about the request.

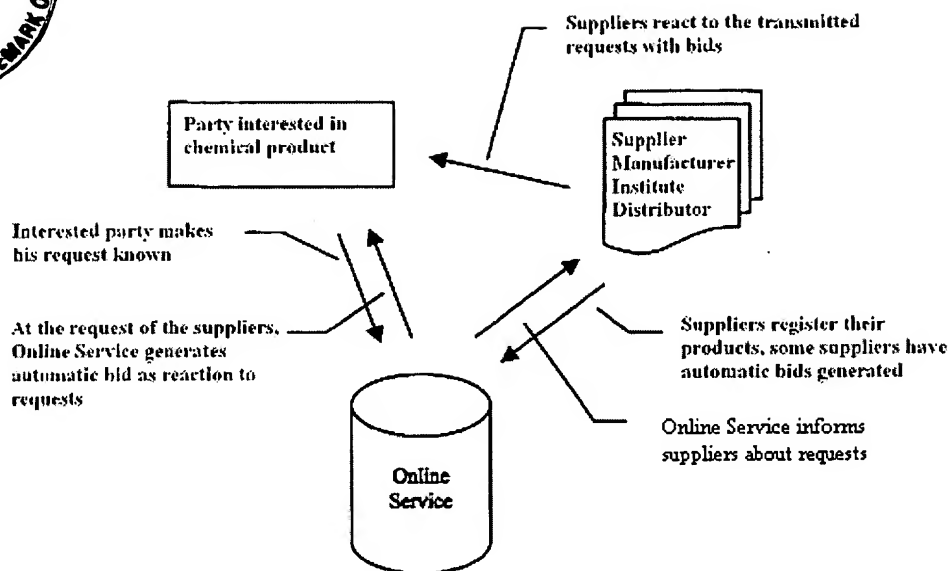


Fig.1



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Specification

Nature of the invention

[0001]

This invention refers to an Online Service for making contact efficiently between buyers and suppliers of chemical products.

State of the art

[0002]

The purchase of chemicals is an inefficient, time-consuming and costly process. Usually, the buyer searches through several catalogs of manufacturers or distributors for the needed product and then sends requests to the relevant suppliers. They process the request and sent their bids to the interested party. Product lists, in which several suppliers of chemical products are listed, are a help to the buyer. More recent forms of these product catalogs are CE-ROM databases or supplier catalogs on the internet. An alternative form of purchasing is simply to enter the request into one of the numerous bulletin boards of the internet.

[0003]

All these methods can be considered inadequate for the following reasons: product catalogs are expensive and not very encompassing because of the high cost of entry. On the other hand, supplier catalogs are usually free instead of the high printing and shipping costs. In any case, only the chemicals of one supplier are described and thus the search for a specific chemical product involves lengthy search through a number of catalogs. In addition, normally the number of available catalogs is limited to a few well-known companies. Searching of an internet list for chemical products is usually free, but here, due to the high cost of entry, the lists are not very encompassing. All these methods also have the severe limitation that the actual work of writing up begins after a successful search. Above all, this is lengthy because many (more than 20) suppliers should be reached. A simple method is the entering of a request into one of the numerous bulletin boards on the internet. Now, here, the principle of hope exists that the right manufacturer will look at the right bulletin board at the right time.

Description of the invention

[0004]

Now, the inventors found a new and surprisingly efficient method to facilitate worldwide commerce in chemical products. For a low cost or even free, the suppliers can enter their products into a database. The interested parties present a request through the internet, the database will be searched and the request will be conveyed in the name of the interested party to all relevant suppliers. Thus, within a short period, by entering the request, many manufacturers and suppliers can be reached. Furthermore, there is a possibility for the suppliers to generate an automatic bid, which contains the product data and prices. This automatically generated bid is sent to the interested party by e-mail/fax. Thus, a significant load is removed from the shoulders of supplier's sales division.

[0005]

The present invention makes it possible for the first time for buyers of chemical products to reach a large number of suppliers in one process step, so that the buyer can select, from a number of suppliers, the one that offers the best conditions.

[0006]

For suppliers - above all for small and medium operations - it has become possible to be present worldwide on the internet with their products. By accurate selection of restrictions, the possibilities of the supplier can be handled very specifically. Thus, he can be defined for individual products, regional, national or multinational markets, select weight classes determined by him, give purity and deadline restrictions or to generate automatic bids. Moreover, the present invention enables him to change the information given by him at any time. Thus, for example, in case of changes in the market, he can adjust the price information as rapidly as possible to the generated bids.

[0007]

The method according to the invention can be explained most simply with the aid of Figure 1:

Suppliers enter their product data into the databases of the Online Service.

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Some suppliers can have automatic bids generated.

The interested party informs the Online Service about his request and specifications.

The database program searches for all suppliers of the desired chemical product, taking into consideration all specifications and restrictions, and divides them into two classes - suppliers with bids to be generated automatically or suppliers that should be informed about the request.

[0008]

The method generates the automatic bids of the supplier for the interested party, informing the supplier about the request and sends these messages by e-mail or fax. The suppliers thus informed, react with bids to the sent requests.

[0009]

The identification of the chemical substances is done based on the CAS Registry Number used worldwide, because this is the only one which a) makes accurate and error-free assignment of products possible and b) describes all known substances (status March 1999: 19 million). All other identification numbers, such as EINECS, Beilstein Registry Number, UN number or similar, although unequivocally assignable, are by far not as encompassing - only the CAS Registry contains more than 19 million substances (status March 1999). A uniform description by language is difficult because always several correct nomenclature methods can be used, and, in addition, in different languages. Thus, the method according to the invention provides the possibility to search the database by entering identification number or name fragments or commercial names or molecular formulas into the database and finally select the correct substance from the indicated hits or to start a new search. The CAS Registry Number of this selected substance will then be used for searching the database.

Short description of the diagrams

[0010]

Figure 1 shows the functioning of the Online Service.

Figure 2 describes a block diagram of the Online Service within a network.

Figure 3 describes a functional block diagram of a database service.

Figure 4 describes a list of menus and input screens.

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Figures 5a-5e show parts of the input screens.

Figures 6-11 show flow charts which describe the method according to the invention.

Figure 12 describes a functional block diagram of a configuration manager.

Detailed description

[0011]

Figure 1: Individual users (10) can be connected through a number of different networks, such as, for example, and in no way limiting, the Local Area Network (LANs), the ethernet LAN (12) or a Token Ring (14) or regional networks which can be reached by telephone lines. LANs (12), (14) are connected through their server (16), (18), with an internet provider (20), for example, BBN Inc., Cambridge, Mass., which offers internet access to many servers.

[0012]

Users can employ the Online Service (26) according to the invention for sending the request for chemical products to suppliers. The service (26) is placed in the worldwide web and is generally available to the public via Hyper Text Transfer Protocol (HTTP) requests of users with commercially available browsers.

[0013]

In a preferred form, the Online Service (26) has a very large number of entries. These entries are information on chemical products and users of the Online Service (26), for example, and this is in no way limiting, substance names, CAS Registry Numbers, suppliers, addresses, contact persons, contact possibilities, bids to be generated automatically.

[0014]

The information on users is preferably obtained from sources such as step 100 (Figure 6a). The user enters the information and sends it to the process system (32). The process system (32) determines if the entered information is complete and correct (step 102), if the selected user name is already registered (step 104), or if the user is already registered as client (step 106), and in this case, if there are reasons for blocking (step 106) [should be 108]. In case reasons for blocking exist, the user is informed about this (step 10) [should be 110] and then the registration is aborted. When the conditions of registration are fulfilled, the process system (32) generates a

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password (step 112), confirms the registration by generation of an HTML page (step 116) and then sends to the user an e-mail which contains the registration information and the password (step 118).

[0015]

Information on chemical products is preferably obtained from sources such as (step 150) (Figure 7a). The user enters the information and sends it to the process system (32). The process system (32) determines if the entered information is complete and correct (step 152), if potential conflicts with already entered products of the user may occur (step 164). In this case, the user is informed by generating an HTML page about the possible conflict (step 156) and the possibility of immediate correction is offered (step 158). The process system (32) transfers the data to the databases (step 160), confirms the product registration by generation of an HTML page (step 62) [should be step 162] and then books the process (step 164).

[0016]

The transfer of a request for chemical products is preferably introduced through sources such as step 220 (Figure 8a). The user enters the identification information and sends it to the process system (32). The process system (32) determines if the user had identified the desired substance with the aid of the CAS Registry Number (step 222). In case this number is not known to him and has entered a name or commercial name or name fragment or an EINECS# or UN# or gave the molecular formula, the process system branches to section C in order to determine the CAS# from the given data either directly or interactively (step 220).

In program section C, the process system (32) determines the CAS# from the information given by the user in (step 220).

In case the user entered the BRN (step 250), the process system (32) searches the data base for the BRN (step 252). In case the BRN was not found (step 254), the process system (32) generates an HTML page with the information that this BRN is unknown (step 256) and aborts the program. Otherwise the process system (32) determines the corresponding CAS# (step 258) and continues to section (B).

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In case the EINECS# was entered by the user (step 260), the process system (32) searches the data base for the EINECS# (step 262). In case the EINECS# was not found (step 264), the process system (32) generates an HTML page with the information that this EINECS# is unknown (step 266) and aborts the program. Otherwise, process system (32) determines the corresponding CAS# (step 268) and continues to section (B).

In case names, name fragments, commercial names or trivial names were entered by the user (step 272), the process system (32) searches the database for the names, name fragments, commercial names or trivial names (step 272), and generates an HTML page with the found substances with selection possibilities (step 274). Now the user selects the substance wanted by him and transfers this information to the process system (32). In case no substance was selected, the program is aborted (step 276). Otherwise, the process system (32) determines the corresponding CAS# (step 278) and continues to section (B).

In case the molecular formula was entered by the user (step 280), the process system (32) searches the database for substances with the molecular formula given by the user (step 282) and generates an HTML page with the found substances with selection possibilities (step 284). The user now selects the substance desired by him and transmits this information to the process system (32). In case he did not select any substance, the program is aborted (step 286). Otherwise, the process system (32) determines the corresponding CAS# (step 288) and continues to section (B).

As soon as the CAS# becomes known, the process system (32) searches the database for suppliers (step 224). In case no suppliers are known to the Online Service (step 226), the process system (32) generates an HTML page with this information and communicates it to the user (step 228).

Otherwise, the process system (32) generates an input screen into which the user can enter the desired delivery conditions and more accurate specifications of the substance, such as, for example and in no way limiting, delivery location, delivery country, purity or delivery deadline (step 230) and forwards it to the process system (32). This checks if all necessary information was entered correctly (step 232), searches the database for suppliers with consideration of all the

specifications of the user and with all restrictions of the suppliers (step 234), generates an HTML confirmation page, sends a confirmation page by e-mail to the user and books the request (step 236). The process system (32) generates the automatic bids of the selected suppliers, sends these to the user and books these; generates the requests to be transferred and sends these to the suppliers (step 238). In case the user wishes to have his request published on the internet (step 240), the process system generates a corresponding database entry (step 242).

[0017]

After this survey on how the method processes the information provided by the user, now the components and the operations of the memory (30) and of the process system (32) will be described in more accurate detail (see Figure 3). When a user (40) wishes to reach the Online Service (26), first of all, he communicates with a webserver and initial gater (44). The Online Service (26) has a storage system (30) and a process system (32).

Storage system (30) can be a resident, a remote-controlled or a combination of resident and remote-controlled storage system and has a number of databases with information on chemical products and users. Preferably, the storage system (30) has several databases (30a-30d), which can be addressed separately, each of which preferably are the model Cindex obtainable from Trio, Inc., and in which the same information is stored. Storage system (30) can also have other databases which store other information or are to fulfill other tasks.

Process system (32) is composed of a number of computers called "gaters" (36a-36d), all of which are preferably Pentium, RTM-based personal computers on which a 32bit operating system is running, such as Windows NT. Each of these gaters (36a-36d) is connected directly with the databases (30a-30d) through a switching network connected in between. Although, only 4 gaters and databases are shown in Figure 3, more or fewer can be used without limitation.

A user (40) reaches the Online Service (26) through the internet and through a firewall (42) which protects the Online Service against unauthorized access. Thus, when a user addresses the Online Service by selecting a universal resource locator URL, the process system (32) provides the user with a main menu (50) (Figure 4) on which preferably it offers at least the following

possibilities: First registration (52), and log-in (54). The selection can be made by the user via the keyboard, or typically, with a mouse or trackball.

[0018]

When the user selects the menu point for first registration in the main menu (50), the process system (32) offers the user an input screen (52) on which there are input fields for the company or university name, addresses, telephone and fax numbers, contact person, e-mail addresses and if the communication with the user should take place via e-mail or fax (Figure 5a).

[0019]

When the user selects the menu point for log-in from the main menu (50), the process system (32) offers the user an input screen (54) with input fields for the user name and the password (Figure 5b).

[0020]

When the user makes a selection from the main menu (50), the gater (44) leads the selection to one of the gaters (36a-36d). The selection as to which gater should be addressed is based on the utilization of all gaters (36a-36d) or alternatively through a round-robin method. As soon as the selection was sent to the gater (36a-36d), for example gater (36b), there will be no more communication between the user (40) and gater (44). Gater (36b) communicates directly with the user (40) through the firewall (42).

[0021]

Gater (36b) (and any other gater) has a preprocessing application which processes the selections. This application determines if the entered information is correct and complete, what type of selection the user made, or if he selected one of the other options described below. In case the selected menu point has to access one of the databases (30a-30d), the preprocessing application in gater (36b) must determine which of the databases (30a-30d) is to be accessed. This selection is generally determined by a round-robin method or, alternatively, by determination of the utilization of the databases. Each of the databases has a lookup application which calls up the required data from the database, for example, as described above.

[0022]

In order to be able to operate as described above, the preprocessing applications observe the databases which are operating at that time and adapt themselves to a temporary or permanent change of the number of the databases. This system of many gates and databases thus has a high redundancy. The fact that a complete set of information is stored in each database increases this redundancy further and permits a high degree of flexibility and extendibility of the system.

[0023]

Figure 5a shows an input screen with the aid of which the user is registered.
Figure 5b shows an input screen with the aid of which the user logs in.
Figure 5c shows an input screen into which the user enters its request and possible specifications.
Figure 5d shows an input screen with the aid of which the user can enter his product data. All data are optional except for the substance names and the CAS#.
Figure 5e shows an input screen with the aid of which the user can give standard text to the interested parties for the bids of the suppliers to be generated automatically.

[0024]

Figures 6a, 7a and 11 are flow charts for changing or erasing information stored in the database.

[0025]

The Online Service (26) also has a registration system with the aid of which registered users can access the Online Service.

[0026]

When the user selects first registration (52) in the main menu (50), the process system (32) calls up a registration application. First the process system (32) offers the user an input screen (5a) in which the user must enter the e-mail address, among others (100, Figure 6a). As soon as the process system (32) receives the e-mail address entered by the user and there are no reasons for blocking (102, 104, 106, 108), it generates a password (112) and sends this to the user by e-mail, together with the information given by the user (118).

[0027]

As soon as the user received the password, he can log into the system in which he selects the menu point "log-in" from the main menu (50). In reaction to his selection, the process system (32) calls up a log-in application. This application allows the processor to call up an input screen (54), which has input fields for the user name and password. This information, entered by the user, is transferred to a security application which authenticates the information entered by the user with the aid of information stored in the registration database (49).

[0028]

As soon as the user was authenticated, the process system (32) offers him a menu (56, Figure 4), which has a number of menu points, such as product registration (60), placing request (68), changing of product data (62), changing of client data (58), input of standard texts within the bids (64) to be generated automatically and change of standard texts within bids (66) to be generated automatically, which have partly already been explained and, on the other hand, are self-explanatory. These selections generally recall routines which process the selections activated by the user.

[0029]

The Online Service (26) also operates a configuration manager (48) which is coupled to all databases and all gaters in order to reconfigure the applications when changes are made in the Online Service (26). The configuration manager (48) is linked with applications which run inside the computer in the process system (32) and in the databases in the storage system (30). These applications are, for example, (Figure 12) security application (80), database lookup applications (82), preprocessing applications (84) and log-in application (86). Naturally, other applications can be resident in the system.

[0030]

Each of these applications (80-86) and the configuration manager (48) are linked to a catalog (88) in which information regarding the relationships between the applications and the types of events which the applications concern are stored. Some of the applications influence the operation of others; for example, requests are transferred from the preprocessing applications (84) in the gaters to the lookup applications (82) in the databases. If one of the databases and

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consequently, naturally, the lookup application (82) of the database is inoperative - by intervention of the system manager or due to error functions - the preprocessing applications (84) must consider this when they transfer requests to the lookup applications (82). Although the preprocessing applications should consider this naturally, a reconfiguration introduced by the configuration manager (48) is to be preferred, since other applications could also be influenced.

[0031]

Another example is the log-in application (86), which is closely connected with security application (80). When a user logs in, the security application (80) checks the registration database (49) in order to make sure that the user is entitled to access and has given the correct password. If now the security application (80) does not function, the log-in function should be held up in order to lock out unauthorized users.

[0032]

The catalog (88) contains information, such as lists of applications, lists of other applications which are related to the applications and the type of events that could affect each application. The configuration manager (48) is connected to all applications and monitors them to events such as error functions or interventions of the system manager, such as maintenance, incorporation or removal of databases or gates, for example, when one of the databases and thus their lookup application (82) are coupled out from the system for maintenance, the configuration manager (48) detects this event and proceeds by checking the catalog (88) to make sure that the lookup applications are connected with the preprocessing applications (84). Then the configuration manager (48) informs the preprocessing applications (88) [should be (84)] about the new status of the lookup applications. The preprocessing applications (88) [should be (84)] reconfigure themselves so that now more databases can be selected among the remaining databases. In case of a round-robin selection method for databases, this means that the pool of databases available for the preprocessing applications is altered. Thus, the configuration manager contributes to system flexibility, scalability and adaptability.

[0033]

After the description of the present invention, it is now obvious that changes can be made without departing from the framework of the invention given in the Claims.

Patent Claims

1. A method, which uses a computer network and databases, accessible through the computer network, in order to make efficient contact between buyer and supplier of chemical products possible, characterized by the fact that the method contains steps, so that
 - a) a database is operated, in which both information on suppliers of chemical products, as well as information on the offered chemical products of the particular supplier are/will be stored;
 - b) suppliers of chemical products enter into the database information which describes the supplier, the offered chemical products, communication or requirement profiles, or change, erase or correct already existing inputs;
 - c) requests for chemical products are received, in which an interested party communicates his identity and the desired chemical product, including any specifications;
 - d) the suppliers of the desired chemical products are identified with consideration of any specifications of the interested party and any applicable requirement profiles of the suppliers to the interested parties;
 - e) a report is sent to the suppliers thus identified, by e-mail, which contains the necessary information on the interested party for making contact, as well as the data on the desired chemical products and their corresponding specifications;
 - f) in case the determined supplier has provided in this profile a computer-generated bid for this substance, this is sent by e-mail to the interested party in the name of the supplier;

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- g) if the interested party so desires, his request is made available to the public through the computer network.
2. A method, which utilizes a computer network and databases, accessible through the computer network, in order to make efficient contact between buyer and supplier of chemical products possible, characterized by the fact that the method includes steps, so that
- a) a database is operated in which information on a very large number of known chemical substances, identified by the CAS Registry Number, is stored;
 - b) a database is operated in which both information on suppliers of chemical products, as well as information on the offered chemical products of the particular suppliers are/will be stored;
 - c) suppliers of chemical products enter into the database information which describes the supplier, the offered chemical products, communication or requirement profiles, or change, erase or correct already existing inputs;
 - d) requests for chemical products are received, in which an interested party communicates his identity and the desired chemical product, including any specifications;
 - e) the CAS Registry Number of these products is determined;
 - f) the suppliers of the desired chemical product are identified with the aid of the CAS Registry Number, taking into consideration any specifications of the interested party and any applicable requirement profile of the supplier to the interested party;
 - g) a report is sent to the suppliers thus identified, by e-mail, which contains the necessary information on the interested party for making contact, as well as the data on the desired chemical products and their corresponding specifications.

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3. A method, which utilizes a computer network and databases, accessible through the computer network, in order to make efficient contact between buyer and supplier of chemical products possible, characterized by the fact that the method includes steps, so that
- a) database is operated, in which information is stored about a very large number of known chemical substances, identified by the CAS Registry Number;
 - b) a database is operated, in which both information on suppliers of chemical products, as well as information on the offered chemical products of the particular supplier are/will be stored;
 - c) suppliers of chemical products enter into the database information which describes the supplier, the offered chemical products, communication or requirement profiles, or change, erase or correct already existing inputs;
 - d) requests for chemical products are received, in which an interested party communicates his identity and the desired chemical product, including any specifications;
 - e) the CAS Registry Number of these products is determined;
 - f) the suppliers of the desired chemical product are identified with the aid of the CAS Registry Number, taking into consideration any specifications of the interested party and any applicable requirement profile of the supplier to the interested party;
 - g) if the interested party so desires, his request is made available to the public through the computer network.
 - h) in case the determined supplier has provided in this profile a computer-generated bid for this substance, this is sent by e-mail to the interested party in the name of the supplier;

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- i) a report is sent to the suppliers thus identified, by e-mail, which contains the necessary information on the interested party for making contact, as well as the data on the desired chemical products and their corresponding specifications.
4. The method according to Claims 2 or 3, characterized by the fact that
- the information on a large number of known chemical substances is information, for example, and in no way limiting, on CAS Registry Numbers, substance names, molecular formulas, trivial names, commercial names, substance descriptions, Beilstein Registry Numbers and EINECS numbers;
- the information on the supplier of chemical products and the offered chemical products is information
- a) which concerns the identity and reachability of the supplier, for example, and in no way limiting: company name, university name, institution name, department, addresses, contact persons, telephone, fax or telex numbers, e-mail addresses, P.O. box numbers, URL's or websites;
 - b) any requirement profiles to the supplier is described to the interested party, for example, and in no way limiting: purity, desired markets, minimum amount purchased, maximum amount purchased, sale price, exclusive acceptance of company clients, packaging or minimum delivery time;
 - c) the communication profiles between the method and the supplier is described, for example and in no way limiting: passwords, the reports should be sent by e-mail or fax;
 - d) the offered chemical products are described, for example, and in no way limiting: chemical substance designations, trivial names, commercial names, CAS Registry

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numbers, EINECS numbers, molecular formulas, Beilstein numbers, catalog numbers of the suppliers;

e) concern optionally bids to be generated, for example and in no way limiting: text which describe the company, sale price, amounts, packaging, delivery times

and the information which the interested party gives regarding its request, the information is that

f) regarding the identity and reachability of the interested party, for example, and in no way limiting: company name, university name, institution name, department, addresses, contact persons, telephone, fax or telex numbers, e-mail addresses, P.O. box numbers, URL's or websites;

g) which describes the desired chemical products and any specifications of the interested party, for example, and in no way limiting,: chemical substance descriptions, trivial names, commercial names, CAS Registry Numbers, EINECS numbers, Beilstein numbers;

h) which regards any specifications, for example, and in no way limiting: purity, amount to be supplied, delivery location, delivery country, type of payment, prices, packaging or maximum delivery times.

5. The method according to Claims 1-4, characterized by the fact that

a) the said computer network preferably and in no way limiting: the global internet;

b) the databases are relational databases, preferably and in no way limiting: Structured Query Language (SQL) databases;

c) that a database contains a list of all users that are registered, whereby this list also contains information for authentication of the user, which are compared with

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information that was given by the user;

d) a supplier can enter the information named in Claim 4, which regards his identity and chemical products into a database or can change them by searching publicly accessible websites and entering there this information into interactive input forms;

e) requests for chemical products to the database are obtained through the internet by an interested party filling out an interactive form of a publicly accessible website.

6. An Online Service accessible through the internet, characterized by the fact that the Online Service is comprised of the following means:

a memory which operates and supports a number of databases which contain information about users and chemical products;

a process system which communicates with suppliers of chemical products through a publicly accessible website and makes it possible for these suppliers to register themselves, so that these suppliers can enter, change or erase information on their chemical products, contact information or restrictions regarding their chemical products in the databases;

a process system, which, besides communicating with buyers of chemical products, who wish to transmit a request to suppliers of these products through a publicly accessible website, searches a database for suppliers of these chemical products with the aid of the CAS Registry Number, and transmits the request to the suppliers of these products thus determined, or, in case the supplier allows generation of an automatic bid, generates this bid and sends it to the buyer.

7. The Online Service according to Claim 6, characterized by the fact that the process system has means for obtaining a request for chemical products from a buyer, in order to search a database which contains information on chemical products and their suppliers, for suppliers of these products, in order to transmit the request to the suppliers of these

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products in order to generate an automatic bid of a supplier to an interested party and to send it.

8. Online Service, characterized by the fact that the Online Service is comprised of the following means:

a number of databases for storing information on buyers and suppliers of chemical products and information on chemical products, where each of these databases has a lookup application, which recalls the data from this database as a reaction to a request;

a process system, which communicates with users through a publicly accessible website, where this process system includes a number of processes on which the following processes run without limitation:

a routine which contains information on suppliers of chemical products,
a routine which transmits these inputs to the database,
a routine which contains requests of buyers of chemical products,
a routine which determines the CAS Registry Numbers of the desired chemical products with the aid of the lookup application of the database,
a routine which transmits the CAS Registry Numbers and the specifications of the requests to the lookup application database

a routine which generates automatic bids and sends these,
a routine which transmits the requests,
a routine which carries out booking of all requests, inputs and generated bids.

9. Online Service, characterized by the fact that the Online Service contains the following means:

means for storing a very large amount of information on chemical substances;
means for storing information on suppliers of chemical products;
means for searching the stored information for suppliers of these chemical products, with

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consideration of the specifications of the interested party and the restrictions of the suppliers;

means for generating and sending automatic bids of the suppliers to the interested party;

means for transmitting requests to the suppliers found.

10. Online Service, characterized by the fact that the Online Service contains the following means:

means for storing a very large amount of information on chemical substances;

means for storing information on suppliers of chemical products;

means for receiving requests from interested parties for chemical products;

means for determining the CAS Registry Numbers of these products;

means for searching the stored information for suppliers of these products with the aid of the CAS Registry Number, with consideration of specifications of the interested parties and restrictions of the supplier;

means for generating and sending automatic bids of suppliers to the interested parties;

means of transmitting requests to the suppliers found.

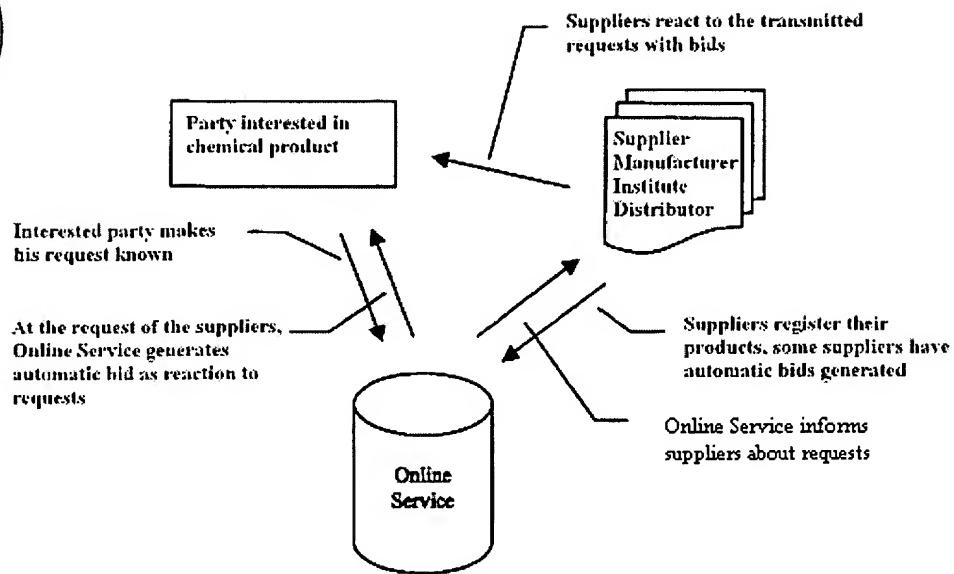


Fig.1

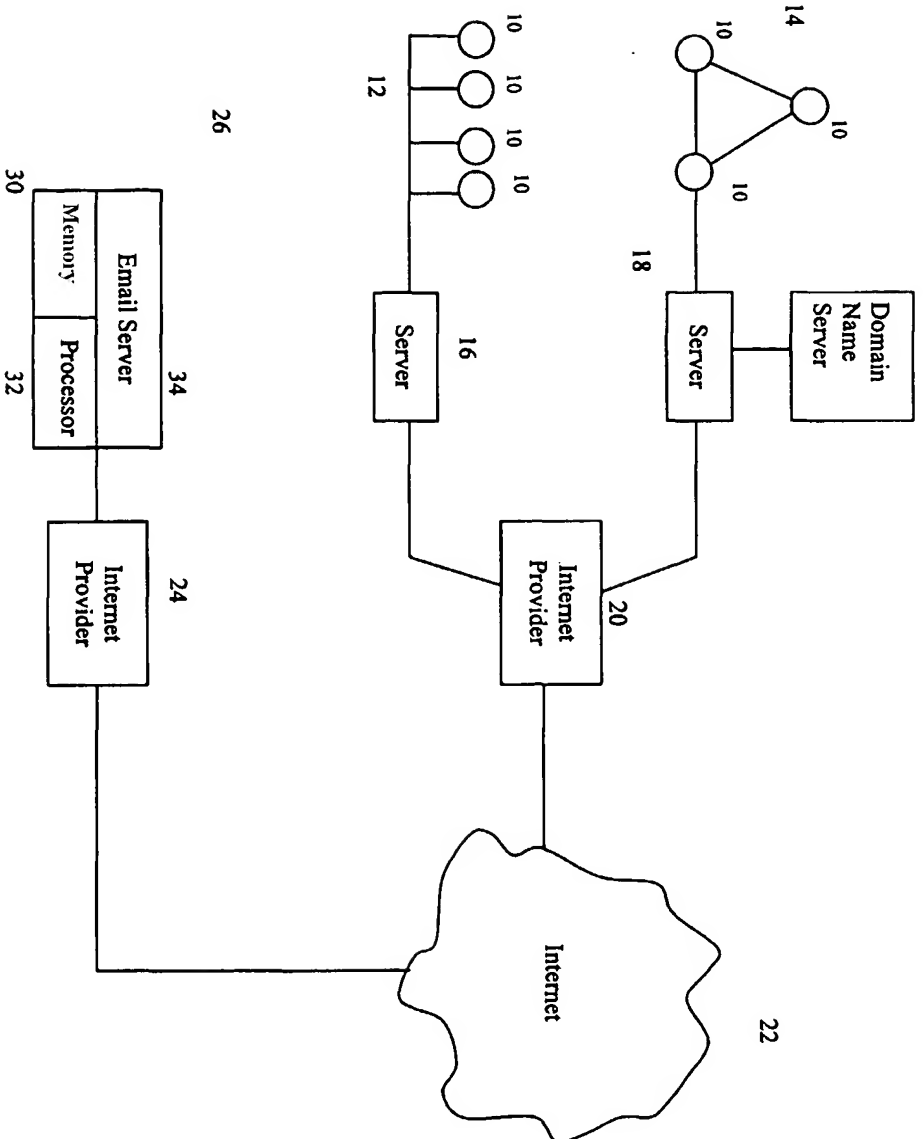


Fig. 2

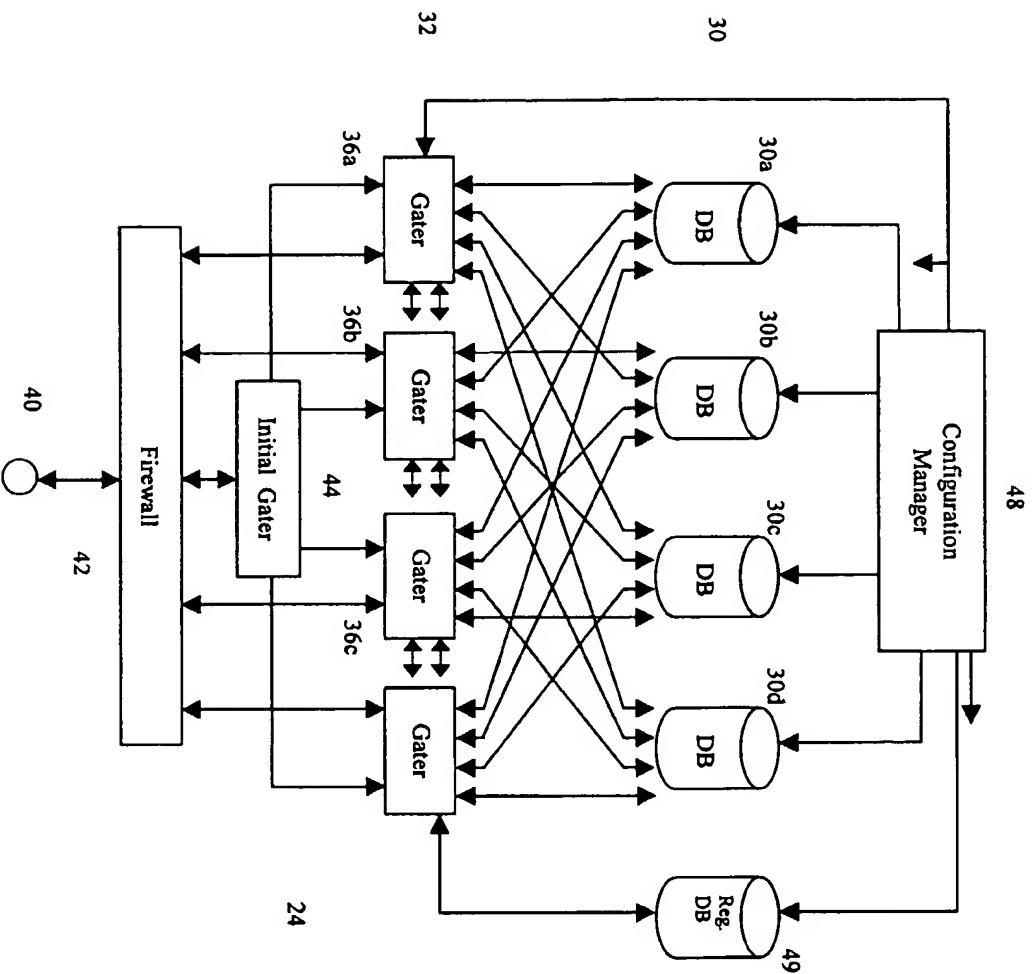


Fig. 3

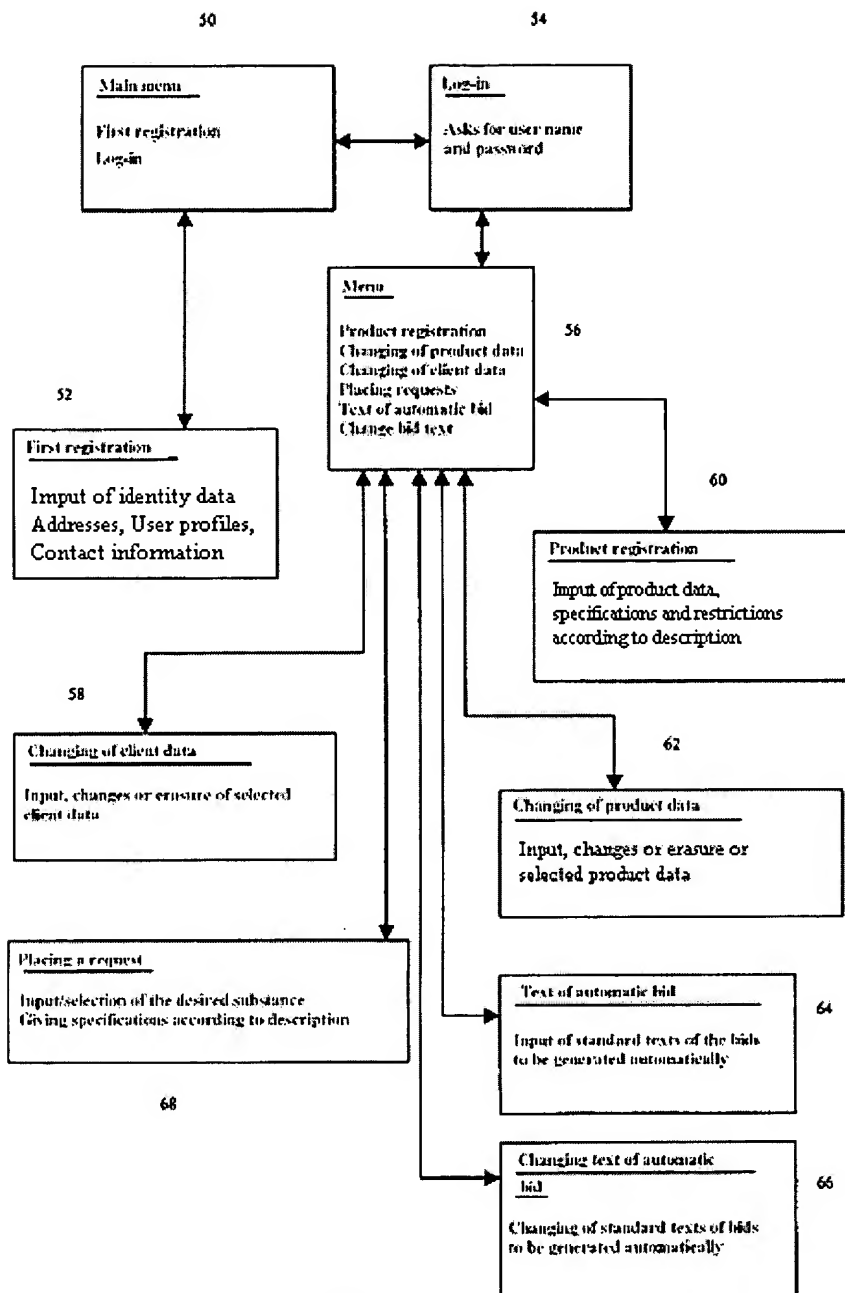


Fig. 4



Company/University	Phone	Title
Street No.	Fax	Department/Institute
City	Contact's last name	E-mail address
Zip code	Contact's first name	Phone no. of contact person
Country	Position	Fax no. of contact person
Message by e-mail/fax		

Fig.5a

Client number
Password

Fig.5b

<input type="checkbox"/> Molecular formula	
<input type="checkbox"/> Substance name or fragment	Place of destination
<input type="checkbox"/> CAS Registry Number	Country of destination
<input type="checkbox"/> Beilstein Registry Number	Delivery date
<input type="checkbox"/> EINECS Number	Quantity delivered
Specifications	Purity

Fig.5c



Substance name	CAS#	Article #	Minimum amount	Maximum amount	Delivery location	Country of delivery	Delivery date	Purity	Automated bid	Standard text
Substance name	CAS#	Article #	Minimum amount	Maximum amount	Delivery location	Country of delivery	Delivery date	Purity	Automated bid	Standard text
Substance name	CAS#	Article #	Minimum amount	Maximum amount	Delivery location	Country of delivery	Delivery date	Purity	Automated bid	Standard text
Substance name	CAS#	Article #	Minimum amount	Maximum amount	Delivery location	Country of delivery	Delivery date	Purity	Automated bid	Standard text
Substance name	CAS#	Article #	Minimum amount	Maximum amount	Delivery location	Country of delivery	Delivery date	Purity	Automated bid	Standard text

Fig. 5d

Standard text
number

1

Standard text

2

Standard text

Fig. 5e

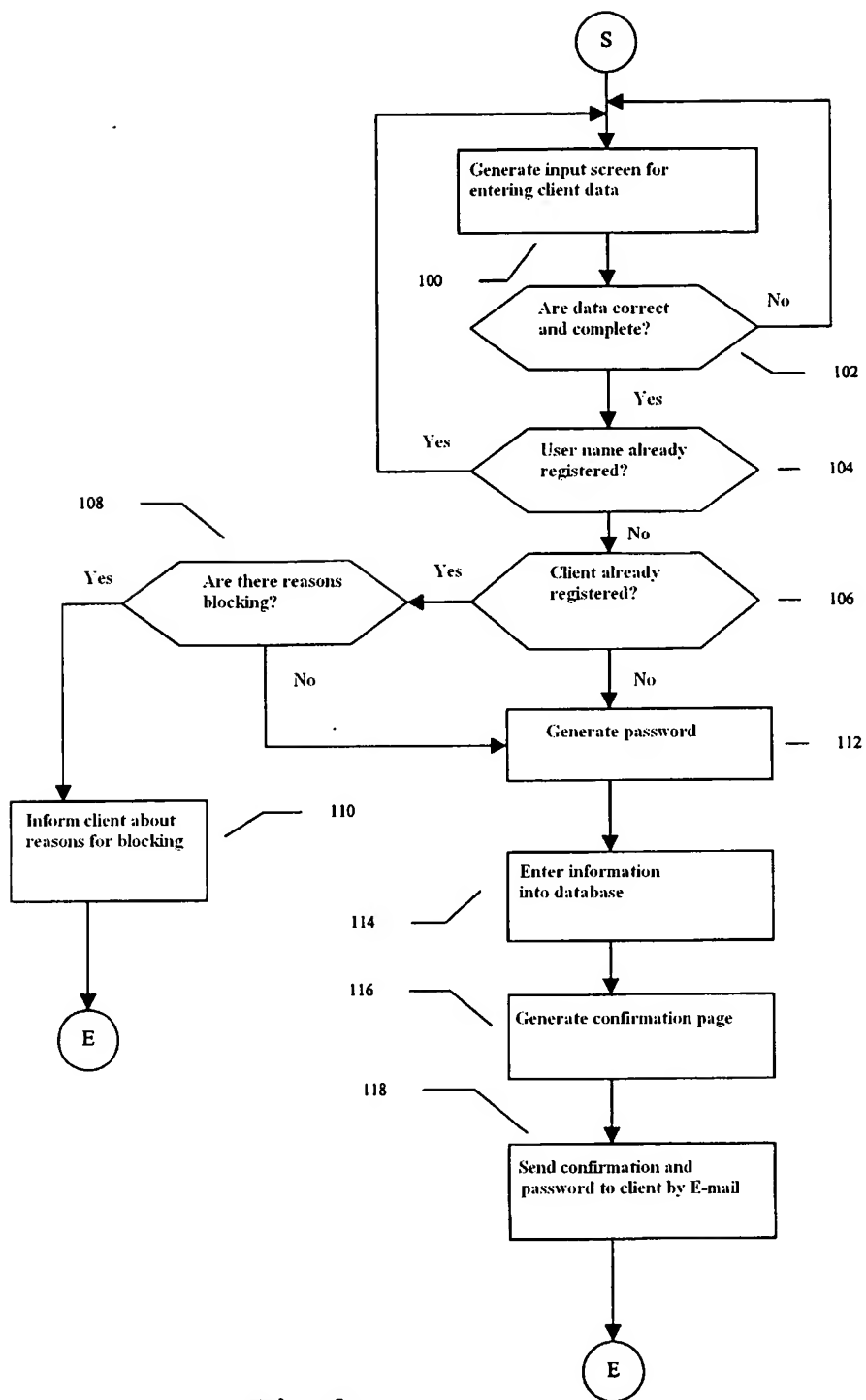


Fig 6a

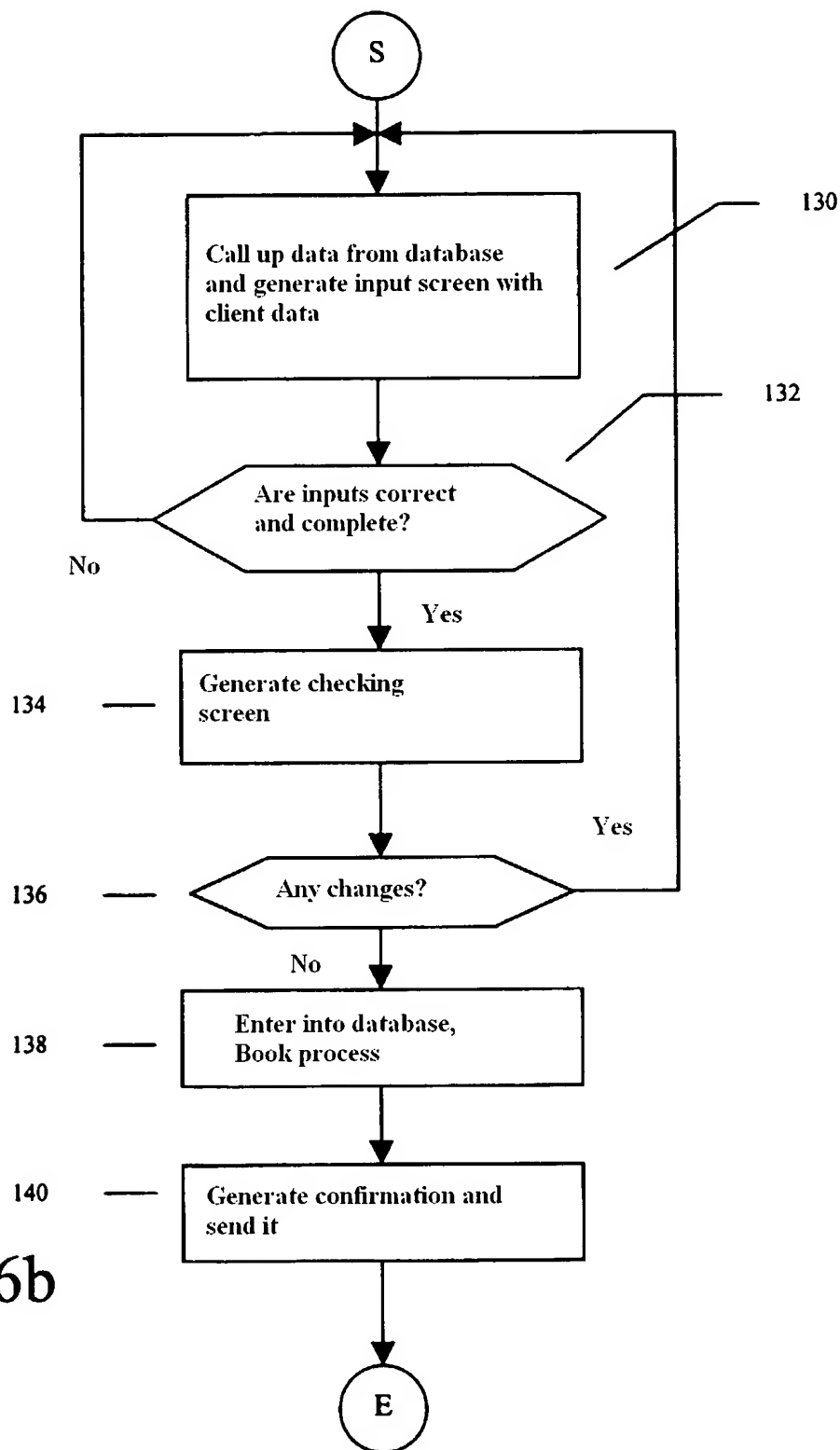


Fig. 6b

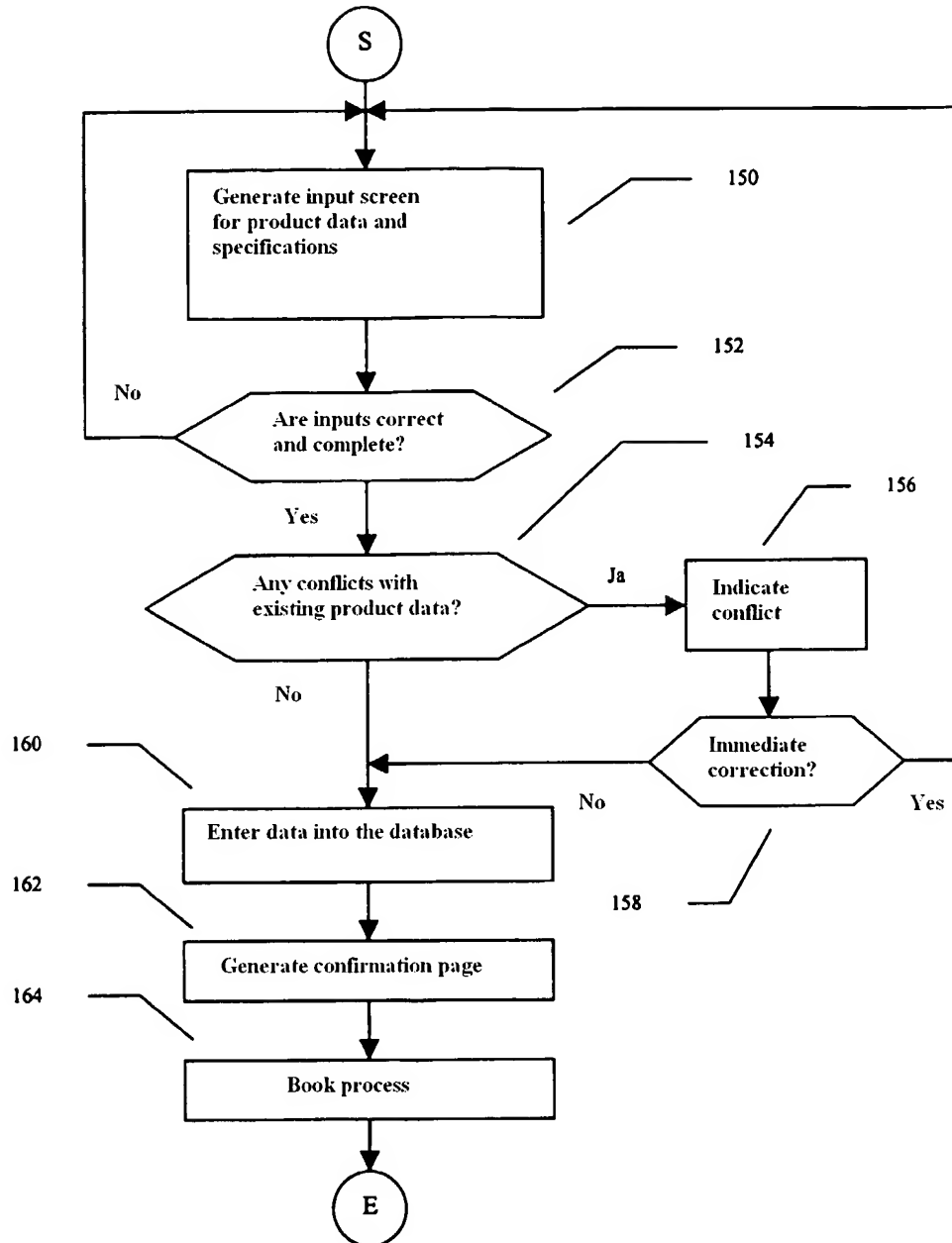


Fig.7a

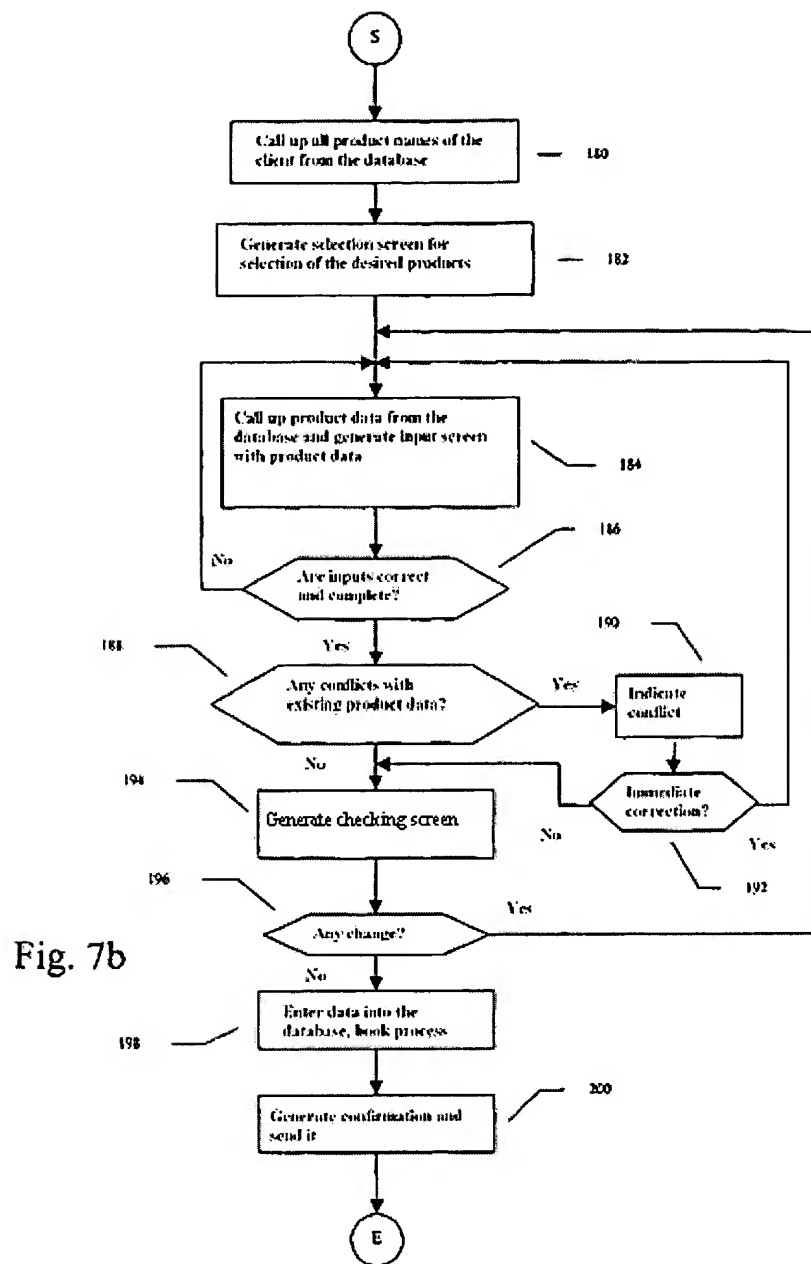


Fig. 7b

Fig. 8a

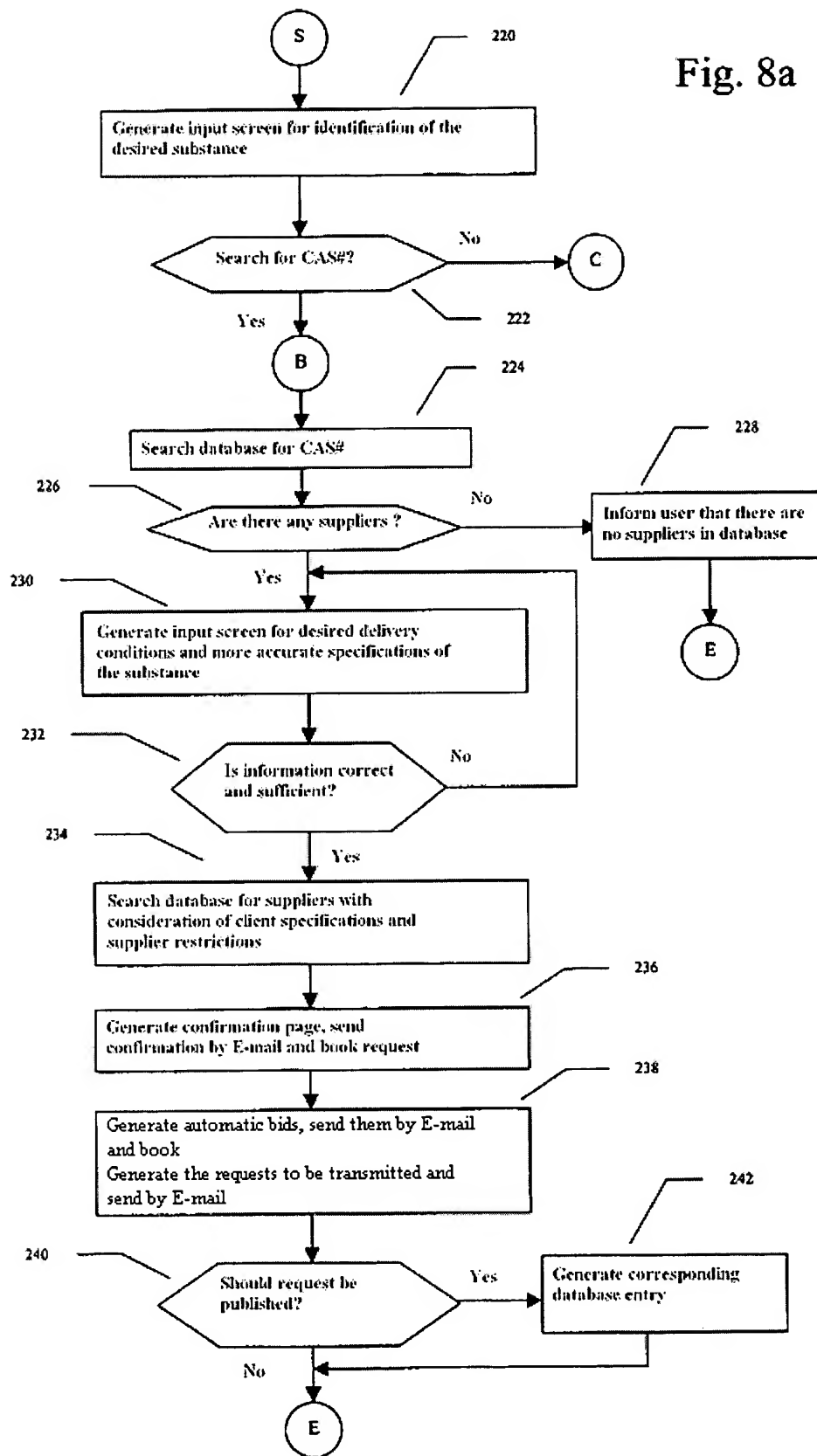


Fig. 8b

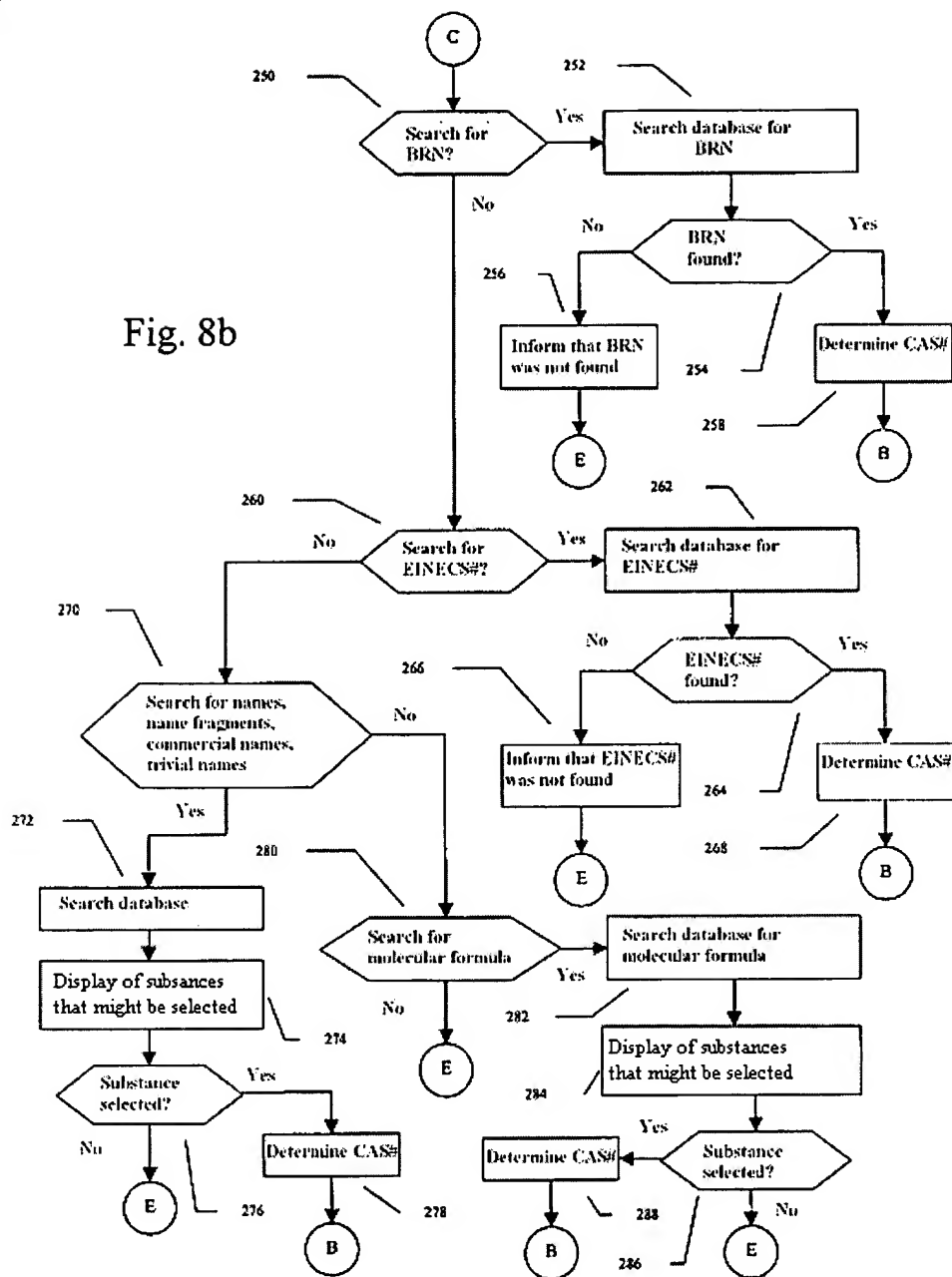
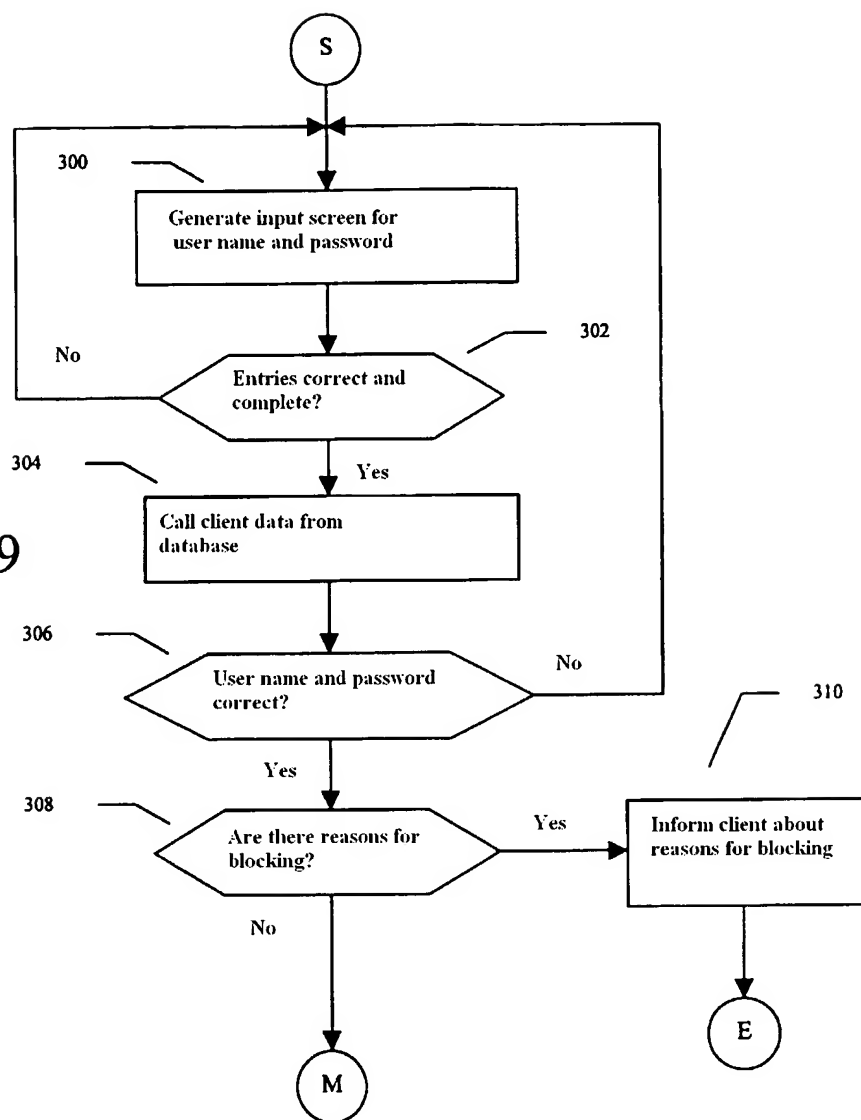


Fig. 9



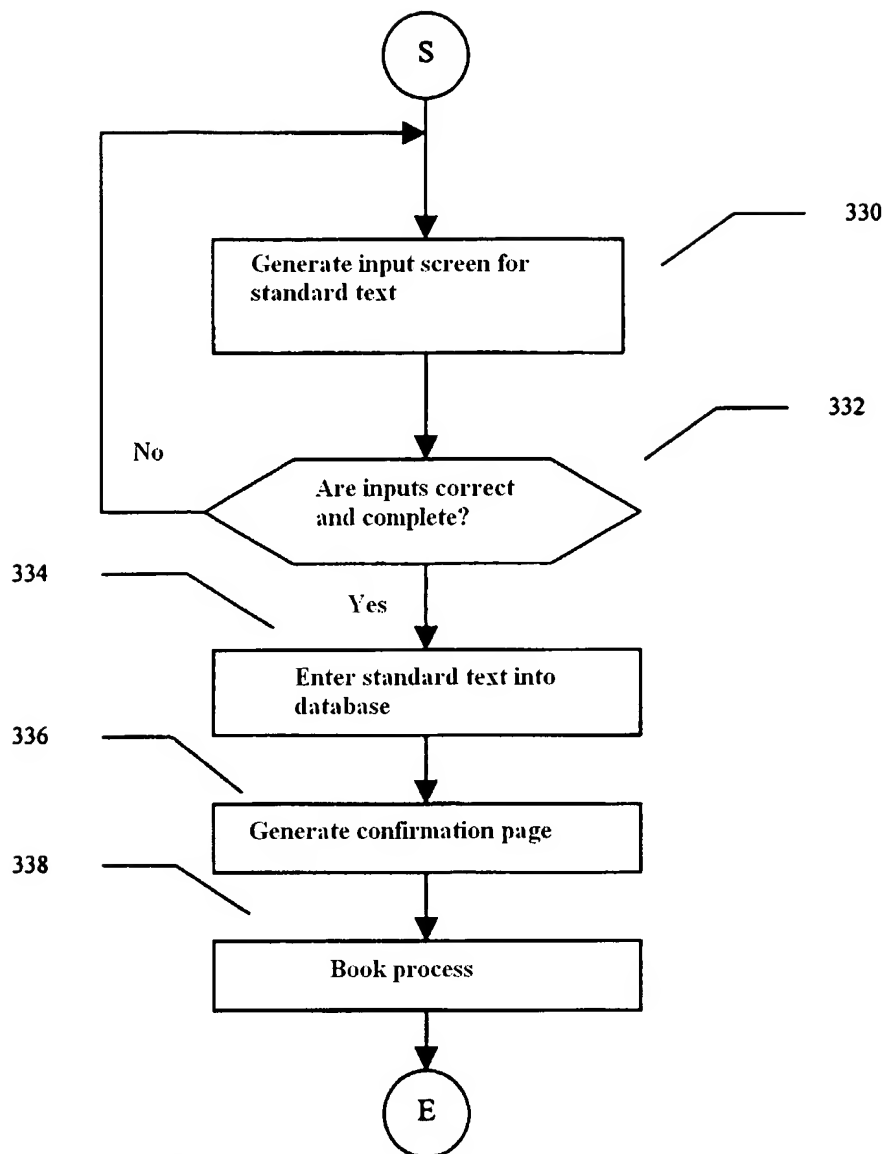


Fig. 10

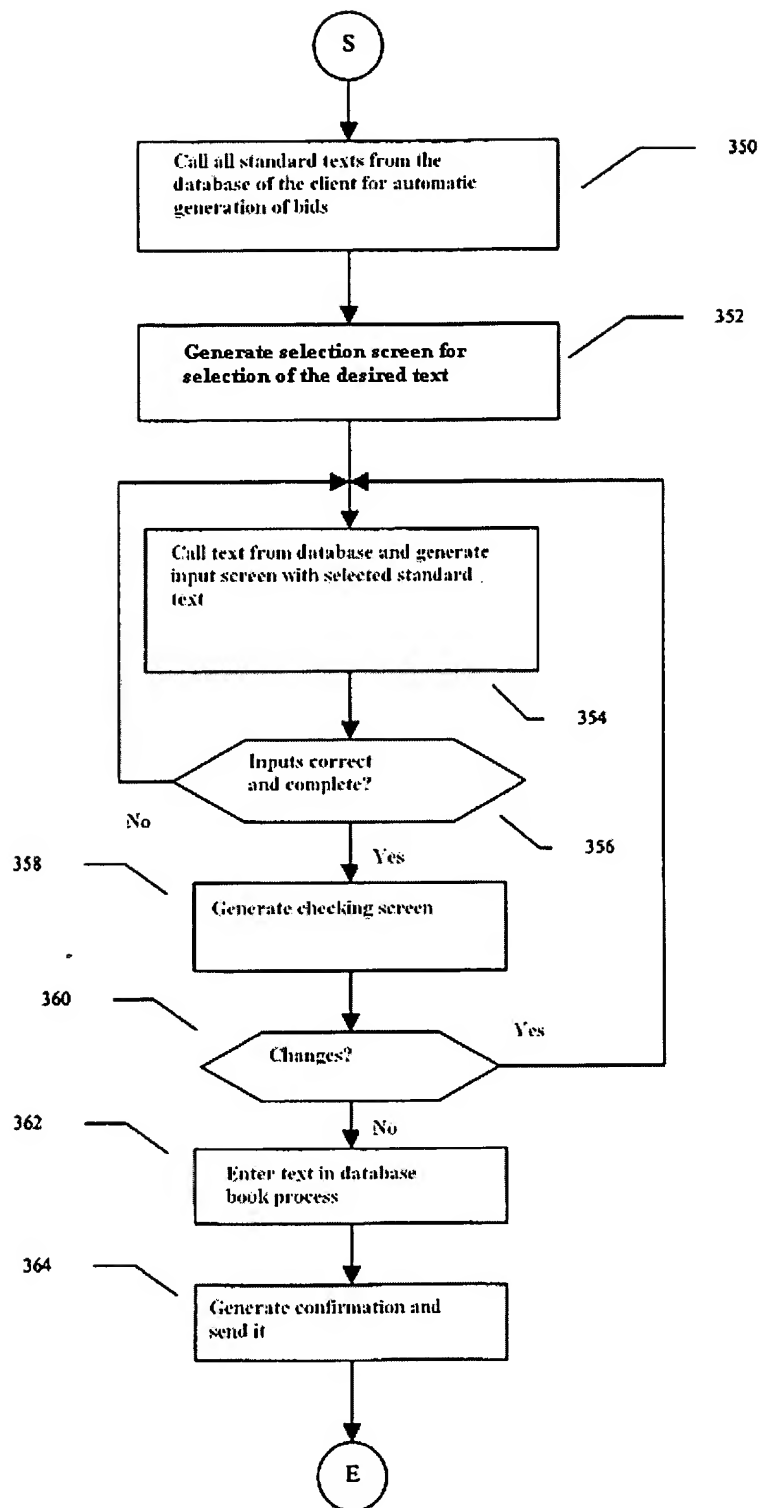


Fig. 11

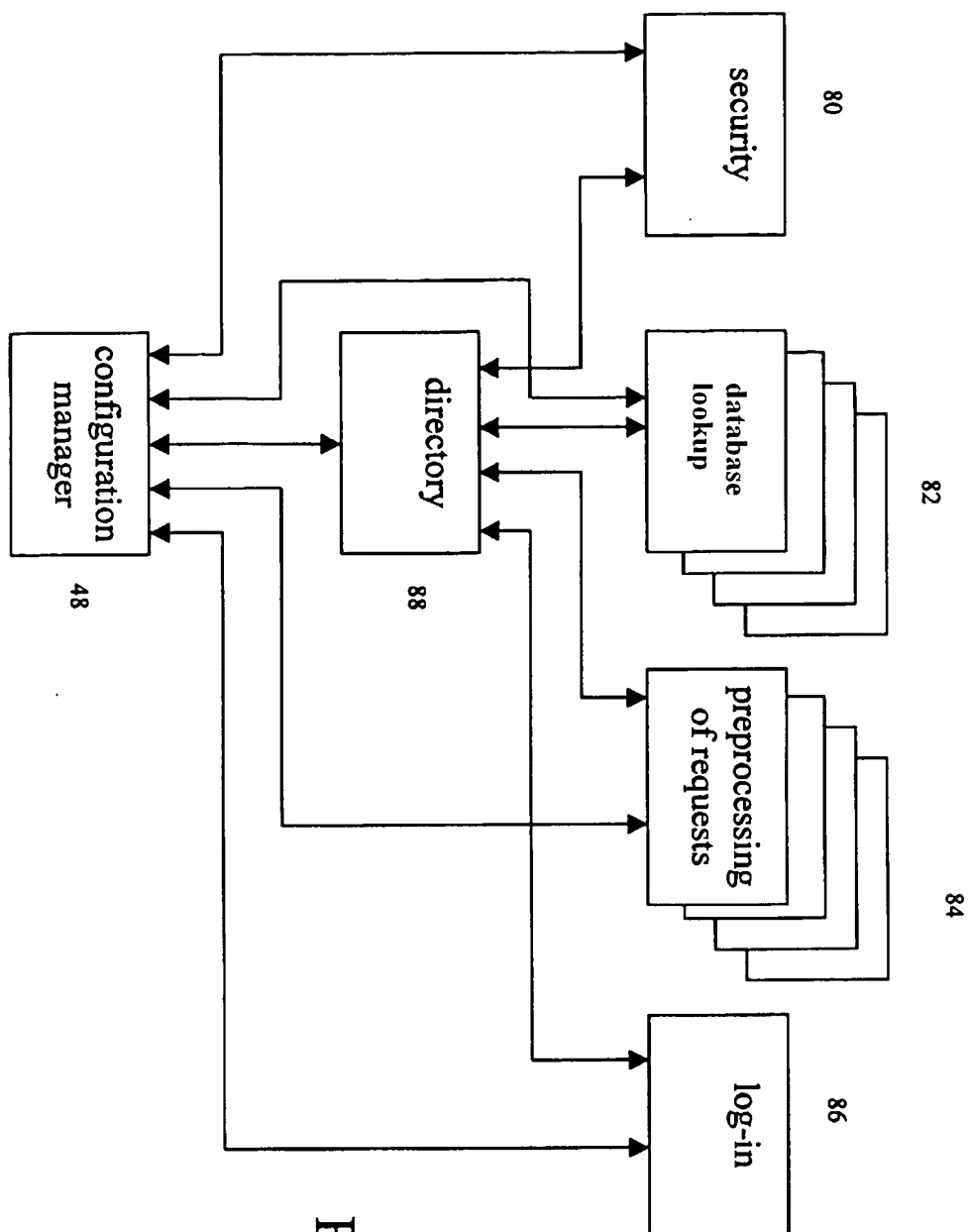


Fig.12